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Arbitrary memory improvement in older preschoolers using didactic games

Elena V. Bateneva[a]*

[a]*Novosibirsk State Pedagogical University, 28 Viluiskaya str., Novosibirsk, 630126, Russian Federation*

Abstract

The success of a child's learning at school largely depends on his or her ability of arbitrary memorization. It is required to establish capabilities of pedagogical contribution to its improvement. The article describes successful use of didactic games for arbitrary memory improvement in older preschoolers using didactic games in the context of implementing a supplementary education program; it provides a short summary of the program and unveils the prospects of isolating children's arbitrary memory as a separate field of concern for the tutor.

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* Bateneva E.V. Tel.: +7-913-896-95-16.
E-mail address: arcy.nsk@gmail.com

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1. Introduction

Arbitrary memory improvement in older preschoolers is considered to be an aspect of a child's preparation for school.

The insufficient memory of a child, who has just started school and his inability to focus on a learning objective, including mnemonic tasks, may result in serious consequences, among which are difficulties with learning new material, self-esteem decrement and loss of motivation to learn.

Incomplete acquisition of the course unit contents at an elementary school challenges the learning success of a child in a secondary school, the learning process of which is based on the experience attained in an elementary school.

In this regard, the success of arbitrary memory improvement in older preschoolers is a topical issue both for children, parents, tutors, elementary school teachers and everyone interested in children's learning success.

Nevertheless, while a child's ability for arbitrary memorization is evidently relevant when entering a school, the principal curricula in preschool educational institutions do not consider arbitrary memory improvement as an isolated focus area of the tutors. However, there are massive opportunities to resolve this problem in the supplementary education sector.

The goal of the research is to discover the efficiency of didactic games use for arbitrary memory improvement in older preschoolers in the context of implementing a supplementary education program in a preschool educational institution.

The research hypothesis is as follows: we expect to successfully improve older preschoolers' arbitrary memory by using task-oriented and consecutive series of didactic games focused on memorization with an incremental complication of educational tasks.

2. Method

The participants of our research are twenty children from a pre-school educational institution.

In addition to children's capacity for conscious mnemic activity (determination of an objective, choice and implementation of a memorization method), memorization efficiency (a short-term and long-term memory span) also served as one of the indicators of the participants' improved arbitrary memory.

The methods used included individual testing of the participants according to: 1) 'The Chain of Actions' method (Dubrovina I.V.) [1], 2) Method of Short-Term Memory Condition Determination (Volkov B.S.) [2], 3) Method of Long-Term Memory Condition Determination (Geitsi E.D.) [3]. Testing according to each of these methods comes with arbitrariness screening questions (specification of an objective, means of memorization, ability and use of determined efforts to achieve the result).

The summarization of the children's testing results showed that the group's mean outcome corresponded to the lower limit of the average value level considered according to each of the methods. It should be noted that there are no results in the group that would correspond to a high/ very high/ low/ very low estimate of these parameters.

Following the preliminary diagnostics results, the experimental and control groups of older preschoolers were formed with each of them having roughly equal capabilities).

The formative part of the control group experiment consisted of usual work on memory improvement, which comprised the tutors' daily use of the following methods: requests, orders, instructions, encouragement, advice, prompts for the children participation in activity, which involves arbitrary and involuntary, short-term and long-term memory activation.

Children from the experimental group took part in a series of events according to the supplementary education program aimed at arbitrary memory improvement and called "And I can memorize!" This program was developed based on the memory and attention improvement methodology elaborated by I. Yu. Matyugin, a professor at the Russian Academy of Encyclopedias, Doctor of Education and founder of the Moscow school of Eidetics –[4], [5], [6].

The program represents a system of 20 activities: 2 entertaining activities to form favorability of memory improvement; 7 packages of games aimed at familiarization with memorization eidotechniques: "Animation", "Synaesthesia", "Graphical Improvisation", "Working Room Method", and "Consecutive Associations"; 4 game activities to improve logical memorization; 5 game activities to enhance attention and self-control; 2 activities on long-term memory activation.

Furthermore, we provided preliminary and final conversations with each participant to account for compliance of real implementation results with intended ones.

The purpose of the program was to provide conditions that would foster arbitrary memory improvement in older preschoolers.

According to the intended results of the program, the child should:

- have experience in active listening, tactful expression and discussion of his/her opinion, be motivated to improve memory;
- be able to identify and formulate the mnemic task independently;
- be familiar with and be able to use mnemotechniques, to describe the content and nature of his/her actions aimed at memorization, invent his/her own way to memorize;
- be familiar with and be able to use ways to mobilize and relax muscles, to increase his/her short-term and long-term memory span.

The logic of the composition of actions is based on:

- Principle of availability: progressive complication of tasks; explanations in a simple language, understandable to children.
- Principle of consciousness and activity: interest-provoking, involvement into practical activity, support of confidence in one’s own abilities.
- Principle of systematicity and consistency: systematization of knowledge based on understanding of interrelation, material division into logically related blocks, holding of events to generalize the students’ knowledge and skills.
- Rules of arbitrary memorization: assignment of mnemic tasks, identification of means of memorization, use of determined efforts.
- Principle of health protection: use of methods of emotional and muscle relaxation to avoid an overload.

By way of example, we provide two games that improve the ability to use a memorization eidotechnique called "Consecutive Associations".

Didactic game 'Remember a Friend'

Educational task: to improve the ability to memorize words on a basis of semantic connection.

Game task: Match pictures and words.

Description: 1) Identify associations between pictures (a lake, a cart, a bulb, etc.) and words (water, a horse, light, etc.), explain this connection. 2) Remembering associations to words and pictures.

Didactic game 'Fairytales for the Fretful Mousekin'

Educational task: to teach children to compose a story based on associative and semantic connection of words being memorized; to reproduce words, keeping their sequence.

Game task: Put the Mousekin to sleep.

Description:

Difficulty level 1: It is required to tell the Mousekin a bedtime story using the words that he chooses, for instance, 'a meadow', 'grass', 'a cow', 'milk', 'a cat', 'a mouse', 'a hole' - 'Grass grows in the meadow. A cow eats grass. The cow gives milk. A cat drinks milk. The cat catches a mouse. The mouse hides in a hole.'

Difficulty level 2: Words to be memorized don't have evident connection, for instance, 'an elephant', 'a vacuum cleaner', 'cones', 'a bag'.

Difficulty level 3: The Mousekin asks them to remember old fairytales and the words he has chosen.

3. Results and discussion

3.1. ***Results of implementing the supplementary education program to improve arbitrary memory***

Following all the actions performed, we summarized the results of the observation performed during the process of implementation of actions and interviewed each participant individually. All the children showed:

- Positive attitude to their own achievements and willingness to improve their own memory;
- ability to identify and name the mnemic task, choose and explain the means of memorization;
- Understanding of all the mnemotechniques examined and ability to successfully use two or more of (the choice was determined by the simplicity of use or their interest in the process of the technique implementation);
- Increase of short-term and long-term memory span.

Over half of the children made up their own means of memorization, showed their understanding of the specifics of active listening, good results in finding solutions to questions while discussing them tactfully.

On the strength of the above, we conclude that the program was implemented successfully.

3.2. ***Results of the summative part of the experiment***

Following the formative part of the experiment, we carried out the final diagnostics and mathematical analysis of the trend data on arbitrary memory in the experimental and control groups according to the student’s t-test. In the first group, the differences between the values before and after the formative part of the experiment have statistical significance. The differences between the values of the preliminary and final diagnostics in the control group do not have statistical significance.

The results of the summative part of the experiment confirm the hypothesis: arbitrary memory in older preschoolers does improve much with the help of task-oriented and consecutive series of didactic games focused on memorization with progressive complication of an educational task.

This research completed, the same series of events was carried out with the control group of children. This group also confirmed the statistically significant change in arbitrary memory indicators that we had determined.

4. Conclusion

Positive experience of memorization and a sense of success, learned by the participants after using the determined efforts to achieve the results, will help them to cope with a growing mental work load, build up confidence in their own abilities, help to activate cognition interest.

Due to the limited number of the participants, we can't state that implementation of the above system of actions will have the same effect under other conditions. Nevertheless, this supplementary education program for older preschoolers can be conducted with more participants or can provide a basis for developing similar programs aimed at arbitrary memory improvement in children.

Accumulation and systematization of experiences will enable formation of an overall package of methodological materials on improvement, organization, provision, implementation and assessment of the performance by supplementary education teachers in their work to improve arbitrary memory in older preschoolers.

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